

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

PUBLICATION NUMBER : 03076185  
PUBLICATION DATE : 02-04-91

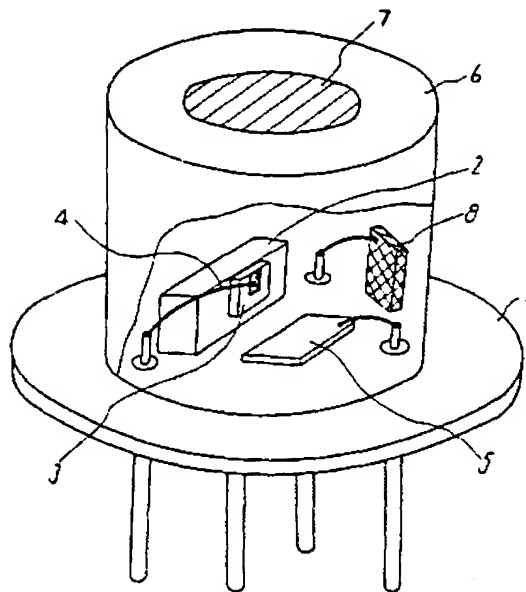
APPLICATION DATE : 17-08-89  
APPLICATION NUMBER : 01211725

APPLICANT : MITSUBISHI ELECTRIC CORP;

INVENTOR : YAGI TETSUYA;

INT.CL. : H01S 3/18 H01S 3/00 H01S 3/094

TITLE : SEMICONDUCTOR LASER DEVICE



**ABSTRACT :** **PURPOSE:** To bring a laser wavelength to be of a desired value at all times by installing a pyroelectric type heat sensor at a position not irradiated with a laser beam emitted from a semiconductor laser chip in a package.

**CONSTITUTION:** A pyroelectric type heat sensor 8 is mounted at a location not irradiated with a laser beam emitted from a semiconductor laser chip 4 in a cap 6 for sealing the laser chip 4, etc., in a semiconductor. When the semiconductor laser chip 4 is driven, heat approximately proportional to input power is generated, and the temperature of the semiconductor laser chip 4 is elevated. Far infrared rays generated by the temperature rise reach the pyroelectric type heat sensor 8, and an output proportional to the temperature can be acquired. The temperature is measured by normally applying an input through a chopper in the pyroelectric type sensor 8.

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PUBLICATION NUMBER : 05110201  
PUBLICATION DATE : 30-04-93

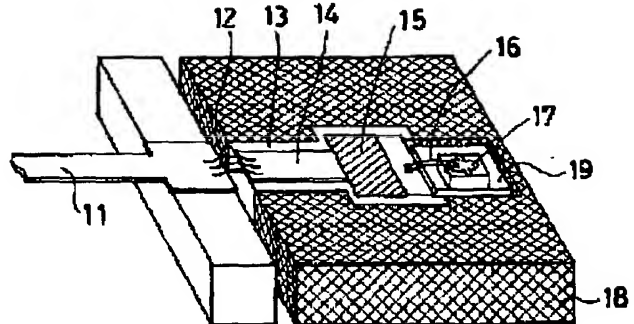
APPLICATION DATE : 18-10-91  
APPLICATION NUMBER : 03297969

APPLICANT : NEC CORP;

INVENTOR : TOMITA KEISAKU;

INT.CL. : H01S 3/18

TITLE : SEMICONDUCTOR LASER DEVICE



ABSTRACT : PURPOSE: To increase the input current for semiconductor laser used for a high-speed optical telecommunication system in order to realize a long-distance transmission.

CONSTITUTION: The characteristic impedance between an input terminal 11 and a strip line 14 is matched to the output impedance of a drive circuit (for example,  $50\Omega$ ), however, the impedance is set lower than the output impedance of the drive circuit when a thin-film resistor 14 and semiconductor laser 17 are viewed from the strip-line side (for example, when the input impedance of the semiconductor is  $5\Omega$ , the resistance value of the thin-film resistor 14 is set to  $20\Omega$ ).

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PUBLICATION NUMBER : 07122808  
PUBLICATION DATE : 12-05-95

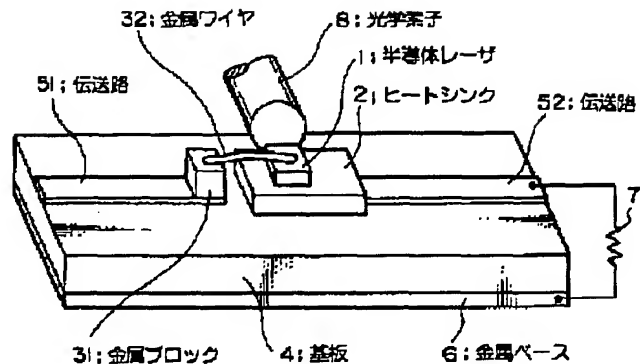
APPLICATION DATE : 27-10-93  
APPLICATION NUMBER : 05269204

APPLICANT : TERA TEC:KK;

INVENTOR : OKI TOKUYASU;

INT.CL. : H01S 3/103

TITLE : SEMICONDUCTOR LASER  
MODULATION CIRCUIT DEVICE



ABSTRACT : PURPOSE: To provide a semiconductor laser modulation circuit device wherein parasitic inductance can be lowered and a semiconductor laser can be modulated at high frequencies.

CONSTITUTION: As a means for connecting an electrode of a semiconductor laser 1 to transmission paths 51, 52, a metallic surface of a heat sink 2 is used to directly connect them, and a metallic wire is made unnecessary. Furthermore, since an upper electrode of the semiconductor laser 1 and the transmission path 51 are connected through a metallic wire 32 via a metallic block 31 whose height is approximately the same as that of the upper electrode of the semiconductor laser 1, the length of a metallic wire can be shortened. Furthermore, since influence of stress which works on an upper electrode of a semiconductor laser is small, a sectional area of a metallic wire can be enlarged.

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	PATENT ABSTRACTS OF JAPAN vol. 015, no. 241 (E-1080), 21 June 1991 (1991-06-21) & JP 03 076185 A (MITSUBISHI ELECTRIC CORP), 2 April 1991 (1991-04-02) * abstract *	1	H01S5/02
A	EP 0 961 372 A (SIEMENS AG) 1 December 1999 (1999-12-01) * column 8, line 24-55; figures 2,7,8 *	1-8	
A	PATENT ABSTRACTS OF JAPAN vol. 017, no. 466 (E-1421), 25 August 1993 (1993-08-25) & JP 05 110201 A (NEC CORP), 30 April 1993 (1993-04-30) * abstract *	1-8	
A	DE 40 36 896 C (MESSERSCHMITT) 20 February 1992 (1992-02-20) * figure 2 *	1-8	
A	US 4 761 788 A (DIETRICH NORMAN R ET AL) 2 August 1988 (1988-08-02) * the whole document *	1-8	
A	PATENT ABSTRACTS OF JAPAN vol. 1995, no. 08, 29 September 1995 (1995-09-29) & JP 07 122808 A (TERA TEC:KK), 12 May 1995 (1995-05-12) * abstract *	1-8	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 8 July 2003	Examiner Claessen, L
<div>CATEGORY OF CITED DOCUMENTS</div> <div>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</div> <div>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</div>			